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ABSTRACT

This study explored the wide range of computer attitudes among Nigerian teachers in relation to their computer knowledge and skills. Positive as well as negative attitudes were also investigated. The study utilized a questionnaire to survey a group of teachers who were undergoing a Sandwich (summer) program at the Alvan Ikoku College of Education (Owerri, Nigeria). Using a Likert scale model, the subjects rated their attitudes toward the use of computer technology in education from 1 (strongly agree) to 5 (strongly disagree). Fifty-six teachers completed the questionnaires. Findings indicated that the majority of the teachers who have positive attitudes toward computer education have little or no computer skills and knowledge. A copy of the computer attitude questionnaire is included. (Contains 43 references.) (Author/MES)

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A STUDY OF COMPUTER ATTITUDES OF NIGERIAN TEACHERS

A Thesis
Presented to the
Faculty of
California State Polytechnic University, Pomona

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Educational Computer Technology

by
Reginald Metu
1994

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THESIS: A STUDY OF COMPUTER ATTITUDES OF NIGERIAN TEACHERS

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The study utilized a questionnaire that was used to survey a group of teachers who were undergoing a Sandwich (summer) program at the Alvan Ikoku College of Education, Owerri, Nigeria. Using a Likert scale model, the subjects rated their attitudes toward the use of computer technology in education from 1-strongly agree to 5-strongly disagree. Fifty-six teachers completed their questionnaires as expected.

The study found that the majority of the teachers in Imo State who have positive attitudes toward computer education have little or no computer skills and knowledge.

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Chapter I

INTRODUCTION

Over the past decade our society has experienced an increase in the use of microcomputer as a way of learning instructional technology. Current research in this area has continued in an upward trend. Thompson & Cloes (1981) in their study, A Learning Aid: Imaginative Electronics Applied to Education, noted, "any child who was sixteen in 1984 and was not computer literate would probably be as disadvantaged in the American society as one who has no driver's license" (p. 83).

An understanding of the computer, how it works and how it can influence our lives was increasingly recognized as a necessary skill for all students who live and eventually will work in the society (Coburn et al (1983 p. 49). This statement is very meaningful and should be applied to other students around the globe, especially those students from the developing nations where literacy in computer technology is very much lacking. Teachers need a level of familiarity with computer technology in order to transfer the knowledge to their students.

end, a survey was conducted. There were thirty questions . These questions were worded in a manner to indicate the respondents "positiveness", and "negativeness" attitudes as well as their computer skills and knowledge. The result of the survey was analyzed to determine if there was a relationship between teachers' attitudes and computer skills.

The field of educational technology is still in its formative stage in Nigerian schools and colleges. Vargas & Fraley (1976) in their study, "Process and Structure: Reorganizing the University for Instructional Technology," noted that universities are organized around content. The basic premise in teaching was one that knowledge of the content was the most important. He also noted that the process of teaching and learning including technology field was taken for granted.

Soremekun (1979) in her study, "Factors Affecting Development and Use of Educational Technology in Nigerian Universities," indicated that crucial to the development of educational technology, is the availability of adequately trained personnel. She also maintained that a form of educational technology existed in Nigerian schools about five years before her study in 1979. However, various audio-visual aids and their use, date as far back as early 1950 (p. 220).

Lack of trained personnel could partly be due to the lack of awareness concerning the field of educational technology. "Technicians and production personnel have been more readily available than persons academically trained, and yet it was the latter that could provide the necessary theoretical framework and expertise for the development of this area" (p. 220).

In one case study, data of the total sample of the universities showed that 14.8 percent were academic staff, while 63.9 percent were production staff. These figures as stated suggest the service nature of educational technology in Nigerian schools to date.

STATEMENT OF PROBLEM

The problem explored in this study is the investigation of the attitudes of teachers in Nigeria towards the use of computer technology in classrooms. The results of this study could provide a baseline for assessing Nigerian teachers' attitudes toward computer educational technology. This study is very important to the educational policy makers in Nigeria, and could enable educators in Nigeria to expedite action in implementing and expanding computer technology curriculum in the schools and colleges.

By educating teachers in this area, teachers will become more positively involved in the development of a computer

curriculum. Schools need to plan and teachers need some guidance in introducing microcomputers into the classroom. Unfortunately, due to ignorance and the availability of few or no computers in schools, only a minority number of teachers will be motivated to embrace the curriculum and the technology.

HYPOTHESIS

It was proposed that the attitudes of Nigerian teachers with some level of computer literacy would be more positive toward the uses of computer technology in education compared to teachers with no computer knowledge.

PURPOSE OF THE STUDY

The purpose of this study was to provide insight on teachers' attitudes toward the use of computer technology in Nigeria classrooms.

This study investigated the attitudes of teachers regarding computer educational technology in Nigeria. The study conducted an overview of computer technology in education, what it was in the past, what it is presently become, and what it will be in the near future. Lastly, this study gave a description of education in Nigeria and its present use of computers.

SUMMARY

This study surveyed approximately eighty-five teachers, from the elementary and secondary schools and colleges. These teachers were queried regarding their present attitude towards computer usage in the classrooms, their views of computer as a tool to improve the quality of education, their willingness to embrace computer technology in the classroom, as well as their fears about computer usage in the classrooms. Their willingness to learn the new skills necessary to undertake leadership roles in computer classroom instruction was also examined.

LIMITATIONS

As a result of little or no incorporation of computer education into the school curriculum at all educational levels in Nigeria, the teachers surveyed were limited in their knowledge and experience with the use of computers. Consequently, some of them would respond to the survey questions based on their theoretical understanding of the subject area. Moreover, due to lack of funds and the expenses involved in conducting survey and gathering data in Nigeria, this study was concentrated in the eastern part of Nigeria, Imo State.

ASSUMPTIONS

For this study, teachers' attitudes were assumed to reflect a positive and desirable response towards the use of computers in classroom instruction.

Additionally, it was assumed that there were tension and anxiety among some Nigeria teachers regarding the introduction of computer education. Such anxiety is similar to the one that exists in some teachers here in America. A good number of American teachers dislike the idea of computer usage in schools. This kind of attitude comes from teachers who feel that computer technology education would mark the end of their career as teachers. This cadre of teachers therefore, tend to resist computer-based education. Nigerian teachers also suffer from lack of equipment and administrative support needed to implement a computer-based education.

Organization of the study

This study is divided into five chapters. The first chapter serves as the introduction of the thesis. It familiarizes the reader with the purpose of the study, and acknowledges delimitations and limitations. Chapter II provides the review of literature. This section explores and

reviews materials already published on the subject and also provides insights for the readers on the body of literature available. Chapter III contains the methodology for the study. Chapter IV provides data collection, tabulation, analysis, and results. Chapter V presents the conclusions, summary, and recommendations.

DEFINITION OF TERMS

1) Computer--An electronic device that accepts and processes information mathematically according to previous instructions; provides the results of this processing via visual displays, printed summaries or in audible forms (Newton, 1991, p. 150)

2) Computer literacy--The ability to understand the capabilities of a computer technology as well as its limitations, and the ability to use the technology in a productive manner

3) Information--Data collected and manipulated for a purpose

4) Junior secondary school--This is the same as the Junior High school. Starts from the sixth grade to the ninth grade

5) Program--A detailed set of instruction that governs what the computer does

6) Technology--The systematic knowledge of a particular art

7) Senior secondary school--This is the same as high school here in the United States. It starts from the tenth grade all the way to the twelfth grade

Chapter II

REVIEW OF LITERATURE

Soremekun (1979) in her article "Factors Affecting the Development and use of Educational Technology in Nigeria Universities" cited factors influencing the use of technology in Nigerian schools. According to Soremekun, an increase in student enrollment has forced University administrators to re-examine teaching methods. Soremekun listed five factors affecting the use of educational technology in Nigerian schools: 1. Organizational structure; 2. Infrastructural constraints; 3. Professional attitudes of instructors; 4. Rapid increase in university enrollment and 5. Government policy in education since 1975.

The literature search for this research project investigated:

1. Attitudes of teachers in general regarding computer technology. 2. Historical use of computer technology in classroom. 3. Description of education in Nigeria and the present use of computers.

ATTITUDES OF TEACHERS

In the research, "Computer Attitudes of Teachers and Students in Relation to Gender and Grade level," Smith (1987), examined the efficacy of attitudes between teachers and students.

Recently, studies have examined the broader social issues related to the new technologies. In a study of 208 college students, (Sproull, Kiesler, and Zubrow) 1984 , they characterized a novice's experience with computers as "encountering an alien culture" (p. 480). These researchers described the "alien" nature of computer as:

> Computing is not just something new; it is also something strange. Its spatial and temporal characteristics, controllability, and nature of feedback are unlike those of other technologies (p. 480).

Johnson (1987) in "Attitudes Towards Microcomputers in Learning: Teachers and Software for Language Development," found that secondary school teachers' experience with computer assisted learning (CAL) was varied and that while a wide range of programs had been used, these teachers preferred those which were open ended, complex, and used

many language skills. The same study revealed that attitudes toward the potential of CAL for specific areas of language learning activities were generally positive. Johnson also stated that senior teachers desired more and better training and greater access to hardware and appropriate software. According to Johnson, teachers' attitudes towards computer in education are inevitably affected by their familiarity with and access to the technology.

Baylor (1985) in his "Assessment of Microcomputer Attitudes of Education Students," found that an introductory course in microcomputer can influence educators' attitudes towards computers in a positive direction. Educators who register for an introductory microcomputer course seem to have better attitudes towards computer than educators in general. Attitudes of participants appeared to vary according to different demographic characteristics. For example, females appeared to be more favorable towards the concept of computer-assisted instruction and flowcharting whereas males indicated more positive feelings towards the concepts of programming and basic Language.

COMPUTER ATTITUDE SCALE

Validity of Computer Attitude Scale (CAS)

Gressard & Loyd, (1985) in their paper presented at the annual meeting of the American Education Research Association characterized computer attitudes into three main categories: (1) Computer anxiety; (2) Computer confidence and (3) Computer liking.

The t-test was used to compute differences between anxiety. The mean for computer anxiety was 29.83 at the pre-program and 33.36 at the post-program. The difference in the mean was significant ($t=-5.48$, $df=69$, $p<.001$). The second t-test procedure used computer confidence as the dependent variable. The mean for computer confidence was 29.83 at the pre-program and 31.54 at the post-program level. The difference was also significant ($t=-3.29$, $df=69$, $p<.01$). A third t-test procedure used computer liking as the dependant variable. The mean of computer liking was 32.84 at pre-program and 33.41 at post-program. The difference in the means was statistically significant at the .05 level.

Gressard and Loyd (1985) concluded:

> The result of the three subscale categories are sufficiently stable, that computer attitude scale has reasonable convergent validity, and that the computer attitude scale was sensitive to attitude changes resulting from computer instruction and experience (Gressard and Loyd 1985, p. 16,18).

The Computer Attitude Scale (CAS) appeared to be a convenient, reliable, and valid measure of computer attitudes.

Computer Attitude Scales (CAS) on Computers

Much research has been done to validate the authenticity of Gressard & Loyd's study. Harrison and Rainer, Jr. (1992) in "An Examination of the Factor Structures And Concurrent Validities for The Computer Attitude Scale, The Computer The Anxiety Rating Scale, and The Computer Self-efficacy Scale," found that the principal factor analysis for each of the three scales resulted in interpretable factor solutions with high alpha reliabilities. Inter-correlations among the derived factors demonstrated the concurrent validity of the three instruments (Harrison & Rainer Jr.). In summary, the study supported the validity of their computer attitude scale.

Content Validity of the Computer Attitude Scale

Sample items from the computer attitudes scale are:

1) Soon our lives will be controlled by computers.
2) Computers turn people into just another number.
3) Computers are decreasing the importance of too many jobs now done by humans.
4) People are becoming slaves to computers.
5) Computers are dehumanizing to society.

These questions were designed to reflect negative attitudes towards computer. Scoring was similar to the Likert Scale from 1-strongly agree to 5-strongly disagree

Below is a set of five questions that show positive feelings towards computers:

1) Computer are bringing us into a bright new era.
2) The use of computers is enhancing our standard of living.
3) Life will be easier and faster with computers.
4) Computers are a fast and efficient means of getting information.
5) There are unlimited possibilities of computer applications that haven't even been thought of (Harrison & Rainer Jr. P.739).

A number of other scales have been used recently to measure computer attitude. The Computer Attitude, Literacy, and Interest Profile (CALIP) was developed by Poplin, Drew, and Gable (1984). Standardized on a relatively large

population (N = 1,236), the CALIP was intended for commercial distribution (Roszkowski, Snelbecker, Aiken, Devlin et al (1988). According to this study, a major drawback of the CALIP for certain application was that it addressed attitudes towards computer in terms of only one attribute, namely "Interest" (p. 1030).

Computer anxiety may be defined as a response to interaction or anticipation of interaction with automated data or information processing systems (Weinberg, 1980). To evaluate computer anxiety, Heinssen et al (1987), developed a 19 items, self reporting Computer Anxiety Rating Scale (CARS). They did not factor analyze the instrument, but did report an internal-consistency reliability coefficient of .87 for the entire scale. Their sample consisted of 270 students.

Computer skill level was an important determinant in computer use, employee placement, selection, education, training, hardware support, and software support (Harrison and Rainer,1992).

Based on the literature, there are expected relationship among computer attitude, anxiety and skills (p.736-737). A positive correlation was expected between computer attitude and computer skill level. That is, attitude towards computer use should be positively related to higher computer skill levels and negative attitude should be associated with lower

computer skills (Arndt, Clevenger, and Meiskey, 1985). Anxiety towards computer use was expected to be negatively correlate with computer skills; low anxiety towards computer use should be related to higher computer skill while higher anxiety should correlated negatively with lower computer skill (Chu and Spire 1991). There was also an anticipated relationship between attitude and anxiety toward computer usage. Attitude was expected to be negatively correlated with anxiety (Igbaria and Parasuaman 1989). Positive attitudes were expected to be related to low anxiety and negative attitude with higher anxiety.

Computer Self Efficacy Scale (CSE)

Murphy, Coover, and Owen (1989), created a 32 - item, self-reporting Computer Self Efficacy Scale (CSE), to measure perceptions of subjects' capabilities regarding specific computer-related knowledge and skills. They reported internal-consistency reliability coefficients of .97, .96, and .92 respectively. Many students experienced varying degrees of anxiety when required to use or even learn about using computers (Bandalos and Benson (1990). Jay (1981), has referred to these negative reactions as "computer phobia." Attempts to explain computer anxiety have focused mainly on its relationship to mathematics anxiety. Gressard and Loyd

(1984b) explained this relationship in terms of the strong mathematical emphasis of advanced course work in computer science. However, this emphasis failed to explain the relationship between computer anxiety and mathematics anxiety.

The O'Quin, Kinsey, and Beery (1987) study demonstrated that group training using peer instruction was successful in reducing nervousness among college professionals.

HISTORICAL USES OF COMPUTERS IN CLASSROOM

This section provides a chronological overview of computers in education; covers the current uses of computer in education, and finally, distinguishes future trends in computer education.

The modern computer initially began its existence on the college campus following the development in 1946 of the first all electronic digital computer at the University of Pennsylvania (Vierling, Vierling, and Kropf,1969, p 3). The machine was named "The Electronic Numerical Integrator and Automatic Computer' or "ENIAC." After a shaky start on several campuses in the late 1940's, computers later became very popular in industries as well. The first large scale digital computers appeared in the early 1950's. Over 4,000 digital computers were installed in 1960, and that number

rose to more than 40,000 in 1968 (Vierling, Vierling, and Kropf 1969 p.5).

Historically, computers were first introduced into Universities as a special electrical machine with auxiliary pieces of peripheral equipment operated by specialists. The programmer communicated with the machine using a machine oriented language. Pollack had the following to say about the first production of electronic digital computer:

> Regardless of the 'true' chronology of concepts or the ambiguity surrounding the proper assignment of credit for 'first' to the right individuals, organizations, or country, electronic digital computers clearly were production items in the United States by the mid 1950's (Pollack,1982, P.25).

As a result of the increasing demands for new technology among educators, it became apparent that the computer would play an active role in the educational process.

This development in digital computers produced an increasingly acute shortage of personnel prepared to deal with computers and their uses. "Manufacturers tried to provide support to their customers by implementing their own training

programs, but the effort fell short as growth continued to accelerate" (Pollack, 1982, P. 25).

A possible alternative was seen in the universities, for example Professors John G. Kemeny and Thomas E. Kurtz of Dartmouth College, with the help of their students in the 1960's, developed the first interactive, time-shared computer language - Beginners' All-Purpose Symbolic Instructional Code (BASIC). BASIC was found to have a general acceptance by students, teachers, business persons and engineers that nearly all commercial computers now have the basic language available for potential users (Parker, 1988, pp. 175).

Some universities maintained their research and design programs, but a large number of these laboratories were under the subsidy of the manufacturers, while other universities channeled their efforts toward development and supporting new applications. This latter orientation brought into sharp focus the desirability of providing a computer resource for use across an arbitrary spectrum of university research and administrative activities. By 1956, more than a dozen of American universities had computation laboratories equipped with computers.

The second era started by 1960, "about 200 colleges and universities were equipped with digital computers and the

general infusion of computer usage into educational process were well established," (Pollack, 1982, p. 27).

In 1961, Carnegie-Mellon University then Carnegie Institute of Technology, had implemented an interdepartmental doctoral program in computer system and communication. Other universities also instituted programs in computer. For example, Stanford University had its own computer department within the mathematics department, likewise University of Wisconsin which set up a numerical analysis department.

The third era of computers began around 1963, with the development of integrated circuits. It lasted from 1964 until 1975. Integrated circuits technology paved the road for a generation of computers that had greater storage capacity and increased speed than ever before. During this period, many accessory devices were developed and marketed, for example, magnetic tape drives and disk drives (Bitter and Camuse 1983 p.33). Also time-sharing interface was introduced as a way of maximizing the uses and efficiency of computers.

A unique factor about the third-generation computers was that they were not aimed at specific applications like business, education, or scientific use, rather, they were designed as gerneral-purpose computers. Not only were speed and reliability enhanced, power consumption was decreased

markedly. Similarly, the size of computers became smaller and the cost less expensive, which made it possible for more schools and colleges to acquire more computer technology than ever before (Bitter and Camuse 1983 p.35).

However, the fourth era engineers were not satisfied with the degree of "miniaturization" that resulted from the integrated circuit of the third generation computers. The integrated circuits of the third generation computers which were designed primarily with chips had only one function. As a result, Large Scale Integration (LSI) technology was developed in the mid-seventies (Bitter and Camuse 1983 p.35). LSI turned computer technology into big business. Demands on institutions to train more personnel such as engineers and programmers to improve and increase their computer knowledge ad manufacture more computers went up.

The development of IBM 3081 in 1980 marked the beginning of the fifth era computers. The IBM 3081 was designed with Very Large-Scale Integrated (VLSI) circuitry. It allowed for multiprocessing - the simultaneous running of several programs by one computer. As computer technology became more affordable, school districts, colleges and universities adapted more computer curriculum to meet up with the demands for trained personnel.

The development of Apple computers in the mid-1980 also had a tremendous impact on educational computing. Apple targeted their products towards students and educators. The Apple brand computers are very easy to learn, and are user friendly. It requires a minimum amount of time to learn Apple computers as opposed to learning IBM brand computers. As a result, majority of teachers are motivated to experiment with computer technology in the classroom environment.

Moreover, hardware and software are more affordable now than ever, keeping trend in computer education in an upward position. Currently, computers and education are combined in a wide variety of ways.

CURRENT USES OF COMPUTER IN EDUCATION

Watts' (1981) study cited a dozen usage for the computer in education. Watts stated that it was economically and educationally sound to use the computers to its fullest capacity. He criticized single usage stating "Where a computer is being used for primarily one application, such as operating certain programs for mathematics teaching, the computer may justifiably be considered a luxury" (p. 22).

The Watts' study listed twelve computer applications in Education as follows:

1) Administrative --This includes students attendance keeping, grade tracking, accounting, payroll services, employee records, students records, class scheduling, and planing.

2) Curriculum planning--This category would allow teachers to gain access to resource files that would list available books, materials, tapes, films, etc. These resources would allow teachers to access already developed programs thereby reducing the task of generating instructional materials.

3) Professional Development--This resource would allow administrators to store inservice materials and re-use them for future use.

4) Library--This application helps keep proper records of books available in school libraries, generates statistics as to what books were checked out and time they were returned. Allows students to search and retrieve books and periodicals stored in the computers.

5) Research--This includes computer hardware and software used in research computation. With the help of the computer, an analysis that would have resulted in a complicated calculation could easily be done with appropriate computer hardware and software.

6) Guidance and special services-This application would include vocational counseling, administration and evaluation of standardized tests, and diagnosis and remediation.

7) Testing Material--This application allows educators to use the computer to generate quick test questions from a database, score tests, evaluate, analyze and keep record of the tests. By so doing, the educator would be able to use these records to compare the performance of one class to another, and make appropriate changes when necessary.

8) Instructional aid--This application allows teachers to use the computer as a simulator, drill and practice, and electronic chalkboard.

9) Instructional Management--Application in this category includes use of the computer to track a child's progress, assign homework based on test results, and individualize instruction

10) Computer assisted learning--This is the use of the computer to provide instruction to the students.

11) Computer awareness and literacy--This is the use of computers to educate teachers as well as the public on the role of computers in the society.

12) Computer science based education--In this application, students study the computer itself, programming, and other technical aspects of the computer (p 8-22).

Currently, computers are being used in other areas of education that were not mentioned in the Watts study. These areas include:

a). Discovery--This was inquiry into database using inductive approach, trial and error, test hypothesis. The teacher presents a basic problem, and monitors students progress in finding solutions. The computer presents the student with sources of information, stores data, permits search procedures, while the student makes hypothesis, tests guesses, develops principles or rules.

b). Computer Network--This application allows individual computers to share course ware, data, and peripheral devices such as printers. Common software are AppleTalk, Novell, Netware, etc. With this application, teachers are able to receive and send data from other workstation across the world. With a modem added to the network, students with their own modem and computer at home are able to dial into the school system and access notes stored for them by their

teachers or peers. This type of application has contributed to make distance learning a reality.

c). Computer Games--These are used as forms of drill-and- practice in a motivational format, individual or small group. The teacher sets limits, directs process, and monitors results. The computer acts as competitor, judge, and scorekeeper, while students learn facts, strategies, skills, evaluate choices, and compete with computer.

d). Computers have also been used tremendously in the Special Education Instruction. With the aid of adaptive switches and individualized software, both physically disabled students and students with learning difficulties can now be taught with computer assistance (Hienich, Molenda, and Russell, p. 229).

FUTURE TRENDS IN COMPUTER EDUCATION

There are many possible trends in computer technology education. Some of these trends as stated in Nickerson study (1988) are possible immediate future trends which seem to be probable. According to the study, among those trends that would appear to be highly relevant to education are the following:

1). The speed of computer devices will increase, the sizes of future computers will become smaller like the hand held calculators,their cost will continue to be reasonable.

2). Computer systems that realize orders of magnitude increases in computing power by exploiting parallel multi-processor architectures will become common.

3). Remote wireless terminals will provide access to computer networks and thereby to central repositories of information of nearly every conceivable type.

4). Microcomputer based computing power will be everywhere - in household appliances, in hand tools, in games and toys, and in clothings.

5). Computer languages will become more end user friendly. Use of natural languages will become available, thereby allowing users the opportunity to talk into the computers.

6). Decision/artificial intelligence computer will become part of computer operation.

7). Multi media communication facilities, allowing the mixture of text, image, and speech would become widely available.

8). With technology, students will be moving away from the passive reception of information to active engagement in he construction of knowledge.

9). The computer technology teacher will become more of a coach or mentor, helping students solve problems presented by the software.

10). Instead of being an expert, posing the problems and knowing the answers ahead of time, the teacher helps students as they engage in problem of their own choices.

11). To incorporate computer technology into course, teachers must give a great deal of attention to designing or redesigning activities for students. (Kozma, Robert B., and Jonhson Jerome 1991).

DESCRIPTION OF EDUCATION IN NIGERIA AND PRESENT USE OF COMPUTER TECHNOLOGIES.

Historically, the development of modern education in Nigeria began in about the year 1515. The first formal education in Nigeria was introduced by the missionaries in September 24, 1842 (Society School & Progress in Nigeria p. 23-37). Rev. Thomas Freeman, and Mr. & Mrs. De Graft of the Wesleyan Methodist Mission who were based in the gold coast (present day Ghana) arrived in Badagry (town in Lagos) started a mission and built a school. Other groups of missionaries

followed. For example, Samuel Ajayi Crowder, a Yoruba native who was sold into slavery and was later rescued by a British naval vessel from slave-trading ship established a missionary school in Badagry. Mr. Townsend, and Rev. C.A. Golmer arrived later and built a mission, a church and a school in Abeokuta in 1846 (Society School & Progress in Nigeria p. 23-37)

By 1849, there were about five Nigerian native ordained missionaries, and forty two teachers working in sixteen schools with a total enrollment of 895 pupils (Society School & Progress in Nigeria p. 23-37)

The work of these missionaries did not stop in the western province of Nigeria. In about 1863, Bishop Crowder with the help of Niger river explorer, M'Gregor Laird, established a mission in Bonny, in the eastern province of Nigeria, and another mission in Onitsha. For nearly a century, educational provisions were dependent upon the efforts of the christian missions (Society School & Progress in Nigeria p. 23-37).

Whereas the early missionaries made a remarkable and successful development in education in the Western and Eastern Nigeria, they were met with strong resistance in the Northern province due to the existence of Qur'anic schools. In 1913 it was recorded that 19,073 Qur'anic schools with a total enrollment of 143,312 pupils existed in the North, but these

schools lacked modern teachers because they utilized the local Mallams (teachers), the Alkali or (Iman) to teach the students on Hausa languag, and most of the instructions were based on the Koran (Society School & Progress in Nigeria p. 23-37).

The development of education in Nigeria shifted gears somewhat with the depression of 1930 and later the World War II which created a shortage of manpower and funds for the colonial administration. World War II also increased the need for educated Nigerians to assist in administrating the colony. Educational opportunities expanded rapidly and demands for educated Nigerians increased. Between 1940 and 1960, self government and later independence, caused further expansion of basic education. Between 1961 and 1975, Nigeria has developed a stable educational system with thirteen universities, seven of which were founded in 1975 (AACRAO World Education Series 1977).

TAXONOMY OF MODERN NIGERIA SCHOOL SYSTEM:

The present educational system was established early in 1976 by the late General Muritala Mohammed. The new system was called Universal Primary Education (UPE), and it was proposed that this new system would provide free primary education for every child born in Nigeria. Ironically, the idea of free primary education seemed buried with its

founder Muritala Mohammed in 1976, when he was assassinated. The present system include:

1) Primary (Elementary) Education - Under this system, once a pupil reaches age six, the pupil would start in primary one. Once the student has completed six years of progressive primary schooling, the student would take the First School Leaving Certificate Examination as well as an entrance examination to enter a high school. It is worth knowing that high school education is not compulsory, therefore, a student might choose not to take the high school entrance examination but choose to learn a trade.

2) Secondary school level - The secondary school level is divided into two parts: (a) Junior secondary school (JSS) which takes three years to complete and, (b) Senior secondary school (SSS) which also takes another three years to complete. Upon successful completion of the of six years of primary education, and scoring within the acceptable range in the high school entrance examination (common entrance), a student would be eligible for placement in junior secondary school, class one. Once a student successfully completes three years in junior secondary school, the student would take a comprehensive examination to determine whether such student is ready for senior secondary school. Successful students are promoted to the senior secondary school class four and after completing

three years as a senior secondary school candidate, the student would sit for the West African School Certificate Examination (WASC). Those interested in Higher education like university and college education would take the Joint Admission and Matriculation Board examination (JAMB), - an entrance exam taken to gain admission into the universities. The outcome of this examination would probably determine future placement of a student. Many students do not advance past senior secondary school education due to financial constraint. Sometimes, students who do not score very well on the WASC examination may choose to attend vocational or trade school, or may choose to attend a preliminary school (this is popularly known as Basic Studies). The idea is to complete and pass with credits all subject areas missed on the WASC examination.

3) Teachers Training Colleges and Occupational/Trade Colleges:

a) Teacher training - The process of teacher preparation takes two or more parts. First is the teachers' training college (TTC). A candidate with a number of Passes in the WASC examination can be admitted into these colleges. The candidates are prepared for two years. At the end of the training, successful candidates are ready to assume positions

such as elementary school teachers or sometimes junior secondary/school teachers.

b) National Certificate of Education (NCE) - Teachers are now compelled to complete the National Certificate of Education before they can teach. NCE holders are found across all levels, however, the majority of the NCE teachers are placed in the junior and senior secondary schools.

c) Teachers University Program - Prospective teachers would attend a university for a period not less than four years to obtained a BA in education. This category of teachers are either used in Senior secondary school, colleges of education, in the education administration, or in the ministeries of education.

4) Occupational/Technical Institutes:

There are technical Colleges like the Yaba College of Technology, Idah Polytechnic, Auchi Polytechnic, Institute of Management & Technology, Enugu, and Imo State College of Technology, Nekede Owerri. Most of these institutes are federally owned and funded, the rest are owned and run by individual states. These colleges offer Ordinary National Diploma (OND) and Higher National Diploma (HND) certificates. Traditionally, these schools admit students who do not qualify for regular university admission or student who can't afford the cost of a regular university education. Students in this category would complete a two-year course load in their

chosen fields of study and also participate in a one year industrial attachment program. Upon the completion of the requirements, the students would be awarded OND certificate in their fields of study. OND holders who opt for HND program can enroll and complete another two years before the HND can be awarded.

5) University Degree programs - This is the last on the hierarchy of traditional education in Nigeria. Normally, a student who obtains five credits or better grade in the WASC exam and who passes the JAMB entrance to the universities are qualified to enter a university in Nigeria. The student's WASC result would be used to determine the major area of study for the candidate. The student is required to complete a four to seven years of instruction depending on chosen major.

It is worth knowing that currently, the majority of Nigerians are not accommodated by the current system. For example, many financially deprived students are not opportuned to attend higher institutions because of the high cost of education. Candidates who do not do well enough in the WASC exam may not be opportuned to attend higher institution either. Also candidates who are unlucky and are assigned subject areas that they do not want may be stuck with these areas of study in order not to loose the chance of being in

college. Consequently, many graduates are "experts" in areas they do not have interest in.

Cobern and Junaid (1985) acknowledged that "the rapid rise of Nigerian school enrollment was an intentional result of the national policy on education which is predicated on an educational philosophy called "developmentalism."

CURRENT USE OF COMPUTERS IN CLASSROOM INSTRUCTION

The use of computers to facilitate learning in elementary and secondary schools is yet to be implemented. Presently, the use of computers in the university education is still not popular.

Paxton and Turner (1984) study asserted that "the novice often view the computer as a mysterious, sophisticated machine which can only be understood by experts." This view is true with Nigerian teachers and could partly account for some of the reasons why computer education has not yielded much supports from teachers in Nigeria.

Schumacker and Hossain (1990) study suggested that faculty members' usage and perception of computer learning center are important in reaching the goal of utilizing computer based instructional technology.

The review of various literature on computer-assisted learning within the developed nations indicated a positive effect in promoting students' achievement (Choi & Gennaro, 1987; Wainwright, 1989). Jegede (1991) study found that students who used computer in a comparative learning setting had the highest attitude score. The study asserted that technology was still new and very costly. "The colossal cost of purchase and maintenance of computers by developing countries, to the detriment of the more pressing needs of ordinary citizen, makes the demand for computers in science classrooms a luxury at the moment" (p. 701). Another point suggested by Jegede's study is related to the factor of defining the concept of computer literacy and what is demanded of computers in developing countries' classrooms. Nigeria was not left out in the desire to join other countries in implementing computers in educational classrooms. This issue, according to Jegede et al was "a key element in the implementation of National Policy on Computer education, which was drawn in 1988" (p. 701).

SUMMARY

This literature search investigated general attitudes of teachers towards the use of computer technology in classroom instruction. It also evaluated the historical use of computer in classroom instruction. What computers in education was in the past was examined, as well as its future trends. Lastly, this literature search gave a description of education in Nigeria and the present use of computer in education.

The findings from the literature reviewed will guide in evaluating the attitudes of Nigerian teachers towards computer use in instruction.

Chapter III

METHODOLOGY FOR THE STUDY

In December 1993, a group of Nigeria teachers participating in a Sandwich (Summer program) program at the Alvan Ikoku college of Education situated in Owerri - Imo State of Nigeria were surveyed about their knowledge and attitudes about computer education.

Participants included 47 male and 38 female teachers with ages ranging from 25 to 50. Their teaching experiences ranged from 3 to 25 years in either primary, secondary teaching or both, and were drawn from local government schools districts around the state.

The questionnaire was a one-page form, comprised of three sub sections (sets).

Set A: 10 questions which are worded in such a way that they would reveal positive attitudes of teachers towards computer education.

Set B: 10 questions which are aimed at identifying negative responds.

Set C: 10 questions to test their knowledge and literacy level of computer subjects.

Using a scale similar to the Likert scale, the teachers were asked to rate the thirty questions from 1-strongly agree, to 5-strongly disagree. About 85 teachers were present in a large lecture hall when the instrument was passed out. At the end, 56 teachers returned their completed questionnaire representing a 66% return rate.

In preparation for this survey, a number of topics were taken into consideration. For instance, the degree of positiveness of teachers attitude towards computer education, teachers opinions regarding the introduction of computer education in their curriculum, and the teachers skills and knowledge regarding computer uses in education in general.

Questions on this topics would draw a cross section of opinions and consequently reveal the teachers attitudes regarding computer the use of computer in schools.

Teachers were also assessed regarding their willingness to embrace computers in the classrooms. These kind of attitude will further help to evaluate how teachers would respond to the idea of computer implementation in their respective schools.

Chapter IV

RESULTS

The result of the survey indicated that the teachers in Imo State School Board are very much interested about the idea of computer education, but the majority of them lack the skills and exposure necessary to assume knowledge in computer education. Fifty-six of the eighty-five questionnaires distributed were returned, a sixty-six percent rate return. The first ten questions explored the respondents' positive attitudes towards computer education.

Table 1

Positive Related Attitudes Towards Computer

	1	2	3	4	5	TOT
1.Computers are bringing about new era in education	45	7	2	1	1	56
2. The use of computers can improve the quality of classroom instruction	35	12	5	0	4	56
3. Learning will be easier and faster with computers	23	19	11	3	0	56
4. I can use computers to improve the way I teach	17	9	18	12	0	56
5. Computers will make teaching easier for me	42	9	5	0	0	56
6. Computers can eliminate most of the tedious work related to teaching	19	27	8	1	1	56
7. I can use computers to keep my class records and prepare needed reports and grades	31	24	0	0	1	56
8. I would like using a computer in my classroom	40	3	8	3	2	56
9. Computers have made a difference in the way students learn in most developed countries	37	11	8	0	0	56
10.Computer skills are necessary for the future	32	23	0	0	1	56

* 1=Strongly agree, 2=Agree, 3=No opinion, 4=Disagree, 5=Strongly disagree. **TOT= Total number of respondents.

From the above table, it is apparent that majority of the teachers' responses are positive towards computer education. For example, in the number one question above, forty-five responses which is about eighty percent of total responses strongly agreed to the question. Also in question number five above, forty-two responses, about seventy - five percent of the total population surveyed answered strongly agree. Forty people, about seventy-one percent, marked strongly agree to question eight above.

The next group of questions were to identify negative attitudes towards computer education.

Table 2

Negative Computer Attitudes

	1	2	3	4	5	TOT
1. I hate computers and the people that work with them	9	1	32	4	10	56
2. Computers will one day take over my job	9	0	0	45	2	56
3. To use computers in the class prevents students from learning	3	18	35	0	0	56
4. I participate in computer courses	35	8	11	2	0	56
5. I prefer keeping my records in the traditional way rather than on the computer	20	13	5	18	0	56
6. Computers will assist students to learn better	18	4	31	3	0	56
7. Computers offer me help in presenting my lessons to my students	32	0	13	9	2	56
8. Computers are dehumanizing to teachers	11	2	9	30	4	56
9. Computers have a role in learning	32	12	6	0	6	56
10. I would never support the idea of computer implementation in schools	4	2	3	1	46	56

* 1=Strongly agree, 2=Agree, 3=No opinion, 4=Disagree, 5=Stronglydisagree. **TOT= Total number of respondents.

The data presented in table two above, does not overwhelmingly suggest that the teachers in this study displayed negative attitude towards computer based education. For instance, forty-five responses, about eighty percent of the fifty-six responses indicated that they disagree to question number two "Computers will one day take over my job." Similarly, thirty responses, about fifty-four percent, marked that they disagreed to question number eight "computers are

dehumanizing to teachers." Forty-six responses, about eighty-two percent strongly agreed to question number ten "I would never support the idea of computer implementation in schools."

From the result in table two above, it appears as if teachers in this study do not show negative attitude in computer education.

The last ten questions were to identify teachers' computer skills and knowledge.

Table 3

Computer Literacy Level

	1	2	3	4	5	TOT
1. I have used a computer before	2	11	6	12	25	56
2. I feel confident working with computers	3	19	0	33	1	56
3. I can learn how to use a computer	36	12	8	0	0	56
4. I have used a computer to store records before	4	9	4	38	1	56
5. I can learn a basic programming language	2	13	2	39	0	56
6. I understand computer terms	14	9	30	0	3	56
7. I can format a disk and copy data onto it	5	11	9	6	25	56
8. I can turn a computer on and get it ready to use	6	4	2	6	38	56
9. I can use a computer to write a letter	8	8	8	12	20	56
10. I feel confident saving data on a disk	5	0	6	11	34	56

* 1=Strongly agree, 2=Agree, 3=No opinion, 4=Disagree, 5=Strongly disagree. **TOT= Total number of respondents.

From table three above, majority of the teachers who took part in this survey do not have much computer skills and knowledge. For example, twenty-five responses, about forty-five percent of those surveyed strongly disagreed to question one "I have used a computer before", While twelve respondents marked disagreed to the same question. Thirty-eight of those surveyed checked disagree, to question number four "I have used a computer to store records before." In question number ten, "I feel confident saving data on a disk," thirty-four people in the survey checked strongly disagree.

More than half of the respondents indicated that they do not know how to use computers at all. From this, it can be concluded that many of the Nigerian teachers are novice in the field of computer instruction and that any training geared towards improving computer education would need to address the fundamental skills necessary to become a computer literate teacher. Only a small percentage of the respondents indicated that they know how to use a microcomputer to further educational goals. This indicates that many teachers would not be able to use computer technology in their classrooms even if the necessary hardware and software were made available. Lack of trained personnel would be a problem in beginning to implement a state-wide computer program. The schools might

need to employ the services of out-of-state or foreign trained personnel.

The survey questions are subject to limitations inherited in this type of survey. In any survey that requests opinions-oriented response individuals interpretations of the questions vary. One respondent might misunderstand that knowing how to turn a computer on is equivalent to knowing how to program it. Similarly, someone else might interpret it to mean that that an individual needs to be a computer wizard or a computer "hacker" in order to assume knowledge of computer operation. Refining these kinds of interpretations is beyond the scope of this survey, however, it is important to keep these kinds of limitations in mind.

Chapter V

CONCLUSIONS

From the result of this survey, several conclusions can be drawn. It appears that the introduction of computers into the Imo state school system will be overwhelming accepted by the teachers. It is also evident that many teachers in this study are not very familiar with the use of computers in the classrooms. Inspite of the high computer illiteracy that is evident on the teachers part, they are largely in favor of using computer to enhance the curriculum at all grade levels. From the result of the survey, majority of the teachers who demonstrated positive attitude in computer education have little or no computer skills and knowledge. However, majority of the teachers indicated their willingness to learn the necessary computer skills. It is reasonable to conclude that these teachers will be willing to help plan and implement computer programs in their various schools whenever funds and personnel are made available.

Recommendations

From the teachers positive response, towards embracing computer education. Nigerian schools especially Imo State school Board are in a good position to implement computer education into their school curriculum without fear of teachers' antagonistic rejection of the idea. From results of this survey, several recommendations can be offered to help implement computer education in Imo State.

An analysis of the needs should be undertaken to determine the level of the teachers knowledge of computer use in classroom instruction. The outcome of the study would allow the schools board to know what the teachers' needs are and subsequently make provisions for these needs.

Teachers need training on how to implement basic computer usage into classroom instruction and other areas of their duties they deem necessary, for instance, record keeping.

There should be a reward system incorporated into the system, whereby educators who spend extra time to get training will be given priority to have a computer to use for instructional purposes.

Lack of many trained personnel would be a problem in the beginning to implement a state-wide computer program. The schools might need to employ the service of out-of-state or

foreign trained personnel to pilot the initial phase of the program.

The State Schools Management Boards should expediate action in allocating funds and hiring of personnel needed to pilot computer programs in the Nigerian schools.

Finally, the school board should encourage the teachers towards the use of computers in education by providing financial coverage and support to the teachers who need them to participate in seminars and workshops geared towards enhancing their computer skills.

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APPENDICES

Computer Attitude Questionnaire

1. Strongly Agree 2. Agree 3. No Opinion 4. Disagree 5. Strongly Disagree

	1	2	3	4	5
SET A					
1. Computers are bringing about new era in education					
2. The use of computers can improve the quality of classroom instruction					
3. Learning will be easier and faster with computers					
4. I can use computers to improve the way I teach					
5. Computers will make teaching easier for me					
6. Computers can eliminate most of the tedious work related to teaching					
7. I can use computers to keep my class records and prepare needed reports and grades					
8. I would like using a computer in my classroom					
9. Computers have made a difference in the way students learn in most developed countries					
10. Computer skills are necessary for the future					
SET B					
1.I hate computers and the people that work with them					
2. Computers will one day take over my job					
3. To use computers in the class prevents students from learning					
4. I participate in computer courses					
5. I prefer keeping my records in the traditional way rather than on the computer					
6. Computers will assist students to learn better					
7. Computers offer me help in presenting my lessons to my students					
8. Computers are dehumanizing to teachers					
9. Computers have a role in learning					
10. I would never support the idea of computer implementation in schools					
SET C					
1. I have used a computer before					
2. I feel confident working with computers					
3. I can learn how to use a computer					
4. I have used a computer to store records before					
5. I can learn a basic programming language					
6. I understand computer terms					
7. I can format a disk and copy data onto it					
8. I can turn a computer on and get it ready to use					
9. I can use a computer to write a letter					
10. I feel confident saving data on a disk					

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